

Appl. No. 10/657,803  
Amdt. Dated November 5, 2004  
Reply to Office Action of August 5, 2004

Attorney Docket No. 81751.0064  
Customer No.: 26021

### **REMARKS**

This application has been carefully reviewed in light of the Office Action dated August 5, 2004. Claims 1, 6, 16, 21, 23, 25, 27, and 29 remain in this application. Claim 1, 6, 21, and 23 are the independent claims. Claims 1, 6, 21, 23 are amended. Claims 2-5, 7-15, 17-20, 22, 24, 26, 28 and 30 are cancelled without prejudice. It is believed that no new matter is involved in the amendments or arguments presented herein. Reconsideration and entrance of the amendment in the application are respectfully requested.

### **Allowable Subject Matter**

In the Office Action, Claims 11, 16, 23, and 29 were indicated to be allowable if rewritten to overcome the rejection under 35 USC §112, second paragraph, and to include all the limitations of the base claim and any intervening claims. Applicant thanks the Examiner and formally recognizes the allowable subject matter of Claims 11, 16, 23, and 29.

### **Non-Art Based Rejections**

Claims 1, 6, 11, 16, 21, 23, 25, 27, and 29 was rejected under 35 USC §112, second paragraph, for indefiniteness. In response, Applicant has amended those claims in accordance with the Examiner's suggestions. Reconsideration and withdrawal of the above 35 USC §112 rejections are respectfully requested.

### **Art-Based Rejections**

Claims 1, 6, and 25 were rejected under 35 USC §102(b) over U.S. Patent No. 5,677,917 (Wheelus). Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the clarifying amendments above and the arguments below.

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### **The Wheelus Reference**

Wheelus is directed to an integrated circuit having a memory array, with programmable fuses coupled to scannable flip-flops or latch circuits. The fuses and flip-flops are used to program predetermined information about the integrated circuit, such as information that would be useful during or after package testing. (*See, Wheelus, Col. 2, lines 6-14*).

### **The Claims are Patentable Over the Cited References**

The present application is generally directed to a fuse circuit and a display driver circuit.

#### **Claim 1**

As defined by amended independent Claim 1, a fuse circuit used for adjusting an analog value based on a setting state of a fuse element includes a latch circuit, which stores a setting state of a fuse element. A latch clock generation circuit generates a latch clock based on a cyclic signal. The latch clock is used for fetching the setting state of the fuse element into the latch circuit. A test signal holding circuit holds a test signal for testing the setting state of the fuse element. A selector selectively outputs one of the test signal held in the test signal holding circuit and the setting state of the fuse element fetched by the latch circuit based on a select signal. A select signal generation circuit generates the select signal based on a test mode setting signal and the latch clock. The latch circuit cyclically fetches the setting state of the fuse element based on the latch clock. The select signal generation circuit generates the select signal so that the selector selectively outputs the setting state of the fuse element fetched by the latch circuit when the latch clock is input. The analog value is adjusted by the latch circuit based on the setting state of the fuse element fetched by the latch circuit.

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Independent Claim 1, as amended, recites "a fuse circuit used for adjusting an analog value based on a setting state of a fuse element" and "wherein the analog value is adjusted by the latch circuit based on the setting state of the fuse element fetched by the latch circuit". Independent Claim 1, as amended, now has an element and/or structure to perform the recited function, which is to adjust the analog value as recited. Applicant has amended Claim 1 to overcome the rejection under 35 USC §112. Therefore, Applicant respectfully requests reconsideration of independent Claim 1, as amended, and withdrawal of the rejection.

Independent Claim 1, as amended, includes the subject matter of Claim 11, which is indicated to be allowable by the Office Action. Therefore, Applicant respectfully submits that independent Claim 1, as amended, is in condition for allowance and such allowance is respectfully requested.

#### Claim 6

As defined by amended independent Claim 6, a fuse circuit used for adjusting an analog value based on a setting state of a fuse element includes a latch circuit, which stores a setting state of a fuse element. A latch clock generation circuit generates a latch clock based on a cyclic signal. The latch clock is used for fetching the setting state of the fuse element into the latch circuit. The latch circuit cyclically fetches the setting state of the fuse element based on the latch clock. The cyclic signal is one of a frame signal FR, a start pulse signal YD, and a latch pulse signal LP, which specifies one vertical scanning period or one horizontal scanning period and an alternating signal, which is used for inverting a voltage applied to a liquid crystal.

Independent Claim 6, as amended, recites "wherein the cyclic signal is one of a frame signal FR, a start pulse signal YD, and a latch pulse signal LP, which specifies one vertical scanning period or one horizontal scanning period and an

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alternating signal which is used for inverting a voltage applied to a liquid crystal". *Support for these amendments can be found in the specification of the present application on page 8, lines 3-11, page 10, lines 20-26 and Figure 6.* Independent Claim 6, as amended, now clarifies the recitation of the cyclic signal. Applicant has amended Claim 6 to overcome the rejection under 35 USC §112. Therefore, Applicant respectfully requests reconsideration of independent Claim 6, as amended, and withdrawal of the rejection.

On page 5 of the Office Action, the Examiner states that the cited references of record do not teach the inclusion of a driver circuit to drive a display panel based on the value determined by the fuse circuit and based on the cyclic signal. In response, Applicant has amended Claim 6 to independent form and to include these distinct features, which are deemed patentable by the Examiner.

The applied Wheelus reference is not seen to disclose the above features of the present invention. In particular, Wheelus is not seen to disclose or suggest "wherein the latch circuit cyclically fetches the setting state of the fuse element based on the latch clock," as required by amended Independent Claim 6 of the present invention.

Wheelus discloses that a scan chain is formed to output the setting state of the fuse element by shifting. Wheelus merely uses a clock as a cyclic signal as it requires the generation of a synchronous signal for shifting. Wheelus is not directed to cyclically fetching the same setting state, as the setting state is output by shifting. Wheelus uses a generated clock for shifting. Wheelus does not divert a signal necessary for driving a liquid crystal for another purpose.

Moreover, Wheelus does not teach or suggest a display driver. Even if it is possible to apply the invention of Wheelus to driving a liquid crystal, Wheelus does not have a structure that allows application of a cyclic signal, such as a signal which

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specifies one vertical scanning period and a signal so as to specify one horizontal scanning period.

In contrast, the present invention discloses that the latch circuit cyclically fetches the same setting state of the fuse element. In the present invention, a signal necessary for driving a liquid crystal is used as a cyclic signal. (*See, Specification, Page 8, line 3 to Page 11, line 3*). This improves the performance and efficiency of the fuse circuit. Wheelus does not disclose or suggest these features of the present invention.

Since the applied reference fails to disclose, teach, or suggest the above features recited in Claim 6, these references cannot be said to anticipate nor render obvious the invention which is the subject matter of that claim.

Accordingly, amended independent Claim 6 is believed to be in condition for allowance and such allowance is respectfully requested.

#### Claims 21 and 23

Claims 21 and 23 are amended to independent form to include the subject matter of base Claim 1 and any intervening claims. In particular, Claim 21, the subject matter of which is indicated as allowable by the Office Action, is amended to independent form including subject matter of base Claim 1. Claim 23 is amended to independent form including subject matter of base Claim 1 and intervening Claim 11, which is indicated as allowable by the Office Action.

Accordingly, amended independent Claims 21 and 23 are believed to be in condition for allowance and such allowance is respectfully requested.

#### Remaining Claims

The remaining claims depend either directly or indirectly from amended independent Claims 1, 6, 21, and 23 and recite additional features of the invention

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which are neither disclosed nor fairly suggested by the applied references and are therefore also believed to be in condition for allowance.

**Conclusion**

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6809 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

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